IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : RICHARD W. STROBEL Docket No.: 01-651

Serial No.: Examiner :

Filed : Art Unit :

For : TIN-SILVER COATINGS

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INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of Patents and Trademarks
United States Patent & Trademark Office
Washington, D.C. 20231

Dear Sir:

In compliance with Applicant's duty of disclosure, the following U.S. patents are brought to the Examiner's attention:

3,503,721 to Lupfer

5,075,176 to Brinkmann

5,514,261 to Herklotz et al.

5,766,776 to Buresch

5,780,172 to Fister et al.

5,902,472 to Arai et al.

5,911,866 to Oshima et al.

5,916,695 to Fister et al.

5,948,235 to Arai

The Lupfer patent relates to an electronic impedance component comprising a ceramic dielectric member, an electrically conductive thin metal film selected from the group consisting of silver, platinum and copper electrically associated with a surface of the ceramic dielectric member

and a lead connector joined by means of a solder to the electrically conductive thin metal film. The solder consists essentially of a eutectic composition of tin and silver.

The Brinkmann patent relates to an electrical connector pair comprising a first plug element made of a base material and a surface coating of an alloy applied using a molten bath method, which alloy comprises tin. The alloy also comprises an effective amount up to a total of 10% by weight of at least one element selected from the group consisting of silver, aluminum, silicon, copper, magnesium, iron, nickel, manganese, zinc, zirconium, antimony, rhodium, palladium, and platinum. The electrical connector pair further comprises a second plug element made of a base material and a surface coating applied using a molten bath method wherein the surface coating comprises unalloyed tin.

The Herklotz et al. patent relates to silver-tin alloys which are deposited by a galvanic method from a cyanide-free bath which is prepared using silver as the nitrate or diammine complex, tin as the soluble tin (II) or tin (IV) compound and mercaptoalkane-carboxylic acids and -sulfonic acids.

The Buresch patent relates to a strip-shaped or wire-shaped compound material with a base material of copper or a copper alloy and with a moltenly applied surface coating of a tin alloy, whereby between both materials there is formed

an intermetallic phase. 0.001 to 0.5% cobalt is added to the pure tin or tin alloy to obtain a particularly fine-granular, smooth intermetallic phase.

U.S. Patent No. 5,780,172 to Fister et al. relates to an electrical conductor having a copper base substrate coated with a tin base coating layer. To inhibit the diffusion of copper from the substrate into the coating layer and the consequential formation of a brittle tin/copper intermetallic, a barrier layer is interposed between the substrate and the coating layer. This barrier layer contains from 10 to 70% by weight of nickel and is preferably predominantly comprised of copper.

The Arai et al. patent relates to a tin-silver alloy plating solution having a tin compound, a silver compound, and a complexing agent including a pyro-phosphoric compound and an iodic compound. The tin-silver alloy layer composition achieves a high electric current efficiency without using harmful compounds such as cyanides.

The Oshima et al. patent relates to an acid tin-silver alloy plating bath which comprises tin ions, silver ions, one compound selected from the group consisting of aromatic thiol compounds and aromatic sulfide compounds, substantially non-cyanide and a balance of water, the pH of the bath being not higher than 2.

U.S. Patent No. 5,916,695 to Fister et al. relates to an electrical conductor having a copper base substrate

coated with a tin base coating layer. To inhibit the diffusion of copper from the substrate into the coating layer and the consequential formation of a brittle tin/copper intermetallic, a barrier layer is interposed between the substrate and the coating layer. This barrier layer contains from 20% to 40% by weight of nickel and is preferably predominantly copper.

The Arai patent relates to a tin-silver-system alloy plating solution containing a tin compound, a silver compound, at least one member selected from a group consisting of bismuth compounds and copper compounds, a pyrophosphoric compound, and an iodic compound.

None of the above-mentioned patents are believed to negate the patentability of the present invention.

Enclosed herewith is a copy of the aforementioned patent documents and a listing on Form PTO-1449.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, DC 20231

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on November 14, 2001
(Date of Deposit)

Nicole Motzer
Name and Reg. No. of Attorney

Signature

November 14, 2001
Date of Signature

Respectfully submitted,

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